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**Canadian Safety  
and Security Program**

# **Project Completion Committee Presentation**

*Faces on The Move*

**CSSP-2014-CP-2000**

***Date: June 22, 2017***

The Canadian Safety and Security Program is led by Defence Research and Development Canada's Centre for Security Science,  
in partnership with Public Safety Canada

**Canada**

# Agenda

Introductions	All
Project Summary <ul style="list-style-type: none"> <li>- Background</li> <li>- Results Summary</li> <li>- Financial Summary</li> <li>- S&amp;T Summary</li> <li>- Outreach Brief</li> <li>- Transition Summary</li> <li>- Risks</li> <li>- Best Practices/Lessons Learned</li> <li>- Recommendation/Decision Request</li> </ul>	Project Manager
Project Performance Discussion	Project Leader, Champion, & Director
<ul style="list-style-type: none"> <li>• Decisions Taken</li> <li>• Actions Required</li> </ul>	Project Director
Close	Project Director

# Project Completion Committee Members

## **PCC Members:**

Project Leader:

Project Champion:

Project Manager:

Project Director:

DRDC CSS Section Head:

Phil Lightfoot: CBSA

Tony Mungham: CBSA

## **Other Invited Members:**

Project Partner:

Project Partner:

CBSA Research Scientist (Technical Authority)

Face4 Systems

Adga



# Project Background

## Goal:

Demonstrate the operational readiness of face recognition in video technology for surveillance at the border

## Objectives:

Achieved Technology Readiness Level 7

Establish approved & validated privacy & security protocol

Build inter-agency ties for watch list development

Demonstrate face-based surveillance in operation

## Deliverables:

Concept of Operations

Approved Privacy Impact Assessment

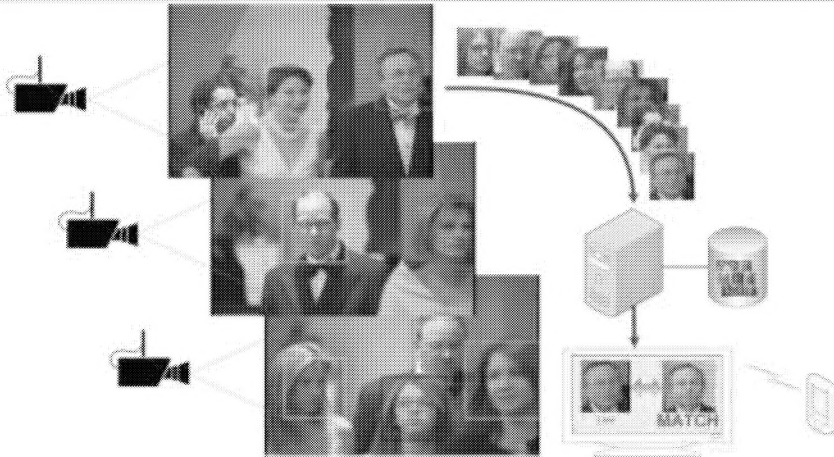
Demonstration System Performance Analysis & Report

Report on FR capabilities/limitations in an operational setting



# Faces on the Move

CSSP 2014-CP-2000



**Lead Organization:** Canada Border Services Agency

**Partnership:** Face4 Systems Inc, ADGA Group, University of Quebec ETS

**Stakeholders:** RCMP, Public Safety, Transport Canada, participated on the project Advisory Board.

**Start-End:** 1 April 2014 to 1 March 2017

**Funds:** CSSP \$1,405,731; In-Kind \$1,213,674; Total \$2,619,405

## Outcomes:

- ✓ Demonstrated that Face Recognition in Video works well in a semi-constrained operational environment
  - Used a watchlist of 5000 previously deported people
  - Processed more than 15,000 travellers per day
  - Generated less than 50 alerts/day to a surveillance officer
  - Correctly detected 47 persons of interest
- ✓ Provided a recommendations for moving forward
  - engineer each implementation to optimize the face recognition performance
  - quality and composition of watchlist images has a significant impact on surveillance performance
  - ensure that privacy controls are built in and that all stakeholders are aware of their obligations to protect privacy.

## Project Summary:

### Goal:

Demonstrate the operational readiness of face recognition in video technology for surveillance at the border

### Objectives:

Achieved Technology Readiness Level 7  
 Establish approved & validated privacy & security protocol  
 Build inter-agency ties for watch list development  
 Demonstrate face-based surveillance in operation

### Deliverables:

Concept of Operations  
 Approved Privacy Impact Assessment  
 Demonstration System Performance Analysis & Report  
 Report on FR capabilities/limitations in an operational setting

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# Results Summary

- The technical and privacy policy framework for the deployment of the *Faces on the Move* project including:
  - A Concept of Operation
  - A High Level Architecture
  - A Privacy Impact Assessment
- The *Faces on the Move* system deployment and the collection of operational as well as control data.
- The independent confirmation of the system performance through off-line match adjudication by CBSA.
- The analysis of the performance of the system documented in the final report
- Recommendations for future research and development.

Watchlist of 5000 previously deported people

Processed more than 15,000 travellers per day

Generated less than 50 alerts/day

Detected 47 persons of interest (over 6 month period)

# Cost Performance – Total CSSP Funds

Organization	DND General Ledger	CSSP Funds Budgeted Funds	CSSP Funds Actual Funds	CSSP Funds Variation
CBSA	1105			\$0
CBSA (EBP)	1105			\$0
Face4 Systems	4915			\$0
ADGA	4927			\$0
University of Quebec ETS	4916			\$0
Total		\$1,405,731	\$1,405,731	\$0



# Cost Performance – Total In-Kind

Organization	DND General Ledger	Budgeted Funds	Actual Funds	Variation
CBSA	1101			\$0
RCMP	1101			\$0
Public Safety	1101			\$0
Transport Canada	1101			\$0
Calgary Police Service	1101			\$0
Ontario Privacy Office	1101			\$0
	1101			\$0
Face4 Systems	4915			\$0
ADGA	4927			\$0
University of Quebec	4916			\$0
		\$1,213,674	\$1,213,674	\$0

# Cost Performance – Total In-Kind

Organization	DND General Ledger	Budgeted Funds	Actual Funds	Variation
CBSA	4916	\$20,000	\$20,000	\$0
CBSA	4305	\$11,000	\$11,000	\$0
Total		\$31,000	\$31,000	\$0

# Financial Overview – Final FY

CSSP Funds - FY16/17						Co-Investment Funds		
Organization	GL Code	CSSP Funds Planned (as outlined in Charter) (B)	CSSP Funds Spent to end of PR 4 Actual Total (C)	CSSP Funds Balance (D = B - C)	Total FY17/18 CSSP Funds Forecast (total expected to be spent) (E)	For Co-Investment, enter total only, GL code not required		
Face4 Systems								
Adga								
				0	↑↑↑ Enter full next year - FY17/18 - CSSP funds forecast above (by GL code not required at this time)	Cash	0	0
				0				
				0				
				0		Forecast Change Comments (F): required if (A) ≠ (C)		
				0		On Track		
				0				
				0				
				0				
TOTAL		286,143	286,143	0	0			



# Science & Technology (S&T) Summary

- Privacy Impact Analysis (PIA) demonstrated that FRiV has a place in managing public safety while mitigating the impact on personal privacy.
- Face4 now have a proven product, Face4 Lookout System that they are taking to potential customers in North America, Europe and Asia Pacific markets.
- GoC Public Safety now has evidence and recommendations associated to the deployment of watchlist screening in semi-constrained environments.

# Outreach Brief

- The concepts and lessons learned will be used in the CSSP Chain of Trust project for managing traveler flow at an airport
- The final report will be distributed within the CBSA and to the project public safety stakeholders
- An executive report will be distributed to public safety executives indicating that FRiV is ready to be used in operational environments
- Face4 will work with the CBSA and CSSP to create media briefings (once the project is socialized within the CBSA).
- Potential to share the results of the project at the Smart Borders Conference in November of 2017.

# Transition Summary

- Face4 now have a proven product, Face4 Lookout System that they are taking to potential customers in North America, Europe and Asia Pacific markets.
- The CBSA has an approved PIA for face recognition in an operational environment (a first for the GoC)
- The implemented technology and associated privacy and operational protocols contribute to the S&T roadmap for public safety allowing the development of policies and procedures that can leverage FRiV technologies for effective security management.
- The concepts and lessons learned will be used in the Chain of Trust project for managing traveler flow at an airport.



# Risks

- The project was executed and final reports are being completed
- There are no completion risks

# Conclusions

- With a carefully engineered capture environment, non-cooperative face recognition in a surveillance modality is ready for use today.
- The quality and composition of watch list images has a significant impact on surveillance performance.
- The early involvement of privacy experts is essential to ensuring that privacy controls are built in and that all stakeholders are aware of their obligations to protect privacy.

# Recommendations

## Project Output Recommendations:

- Engineer each implementation in order to optimize FR
- Tune performance before putting the system into service
- Select and train officers in the adjudication of surveillance face images
- The engineered solution must take into account controls to protect the privacy of personal information

## Completion Recommendation:

Recommend that upon receipt of the following deliverables, the project will be closed:

- Project Completion Report
- Final Analysis Report



## Annex A – Results of PCC

*The meeting featured a detailed overview of the project's accomplishments, generating a vibrant discussion amongst the participants about the potential for the technology to transform border security operations, as well as its many additional potential applications. DRDC CSS and all of the project partners agreed that the project should be regarded as a significant success.*

# PCC Decisions

*Insert decisions made during the meeting*

The following decisions were made by PCC members:

- The communications effort around the project needs to be carefully coordinated across project partners, with multiple products prepared for different audiences.
- The approach to addressing privacy issues through consultation with external experts should be highlighted in all communications.

## Baker, Courtenay

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**From:** Marchand, Jodi  
**Sent:** July 7, 2016 11:41 AM  
**To:** Baklid, Bente  
**Cc:** Rydzik, Marc-Andre; Ojha, Richard; Moxon, Christopher  
**Subject:** FW: FOTM

Hi Bente,

Please see David's email below re: budget for FOTM pilot project.

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**From:** Bissessar, David  
**Sent:** July-07-16 11:35 AM  
**To:** 'Marchand, Jodi'; Mungham, Tony  
**Cc:** Moxon, Christopher  
**Subject:** RE: FOTM

Hi Jodi

The project's budget is around \$2.6M over three years at this point.

Of that \$2.6M, we received about \$1.4 of funding from Defense Research and Development Canada. The remaining \$1.2M in costs are covered by the CBSA, and our partners (Face 4 Systems, ADGA, Universite du Quebec and a few OGD).

The cost and high level scope over the three years of the project is as follows:

Year	Activity	Costs
Year 1	Writing software and preparing a privacy impact assessment and laying the operations and policy foundations for the test run.	\$1.3M
Year 2	Finalizing Software and PIA, preparing the Region, Writing SOP	\$0.9M
Year 3	Deploying software at T3, running demonstration, documenting results.	\$0.4M

Hoping this helps. If more discussion is needed, please let me know.

Regards,  
DAvid

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**From:** Marchand, Jodi  
**Sent:** July-07-16 8:05 AM  
**To:** Mungham, Tony; Bissessar, David  
**Cc:** Moxon, Christopher  
**Subject:** FOTM

Good morning,

I met with my Director yesterday, Bente Baklid, and she is curious to know how much funding we received to pilot this project. I've read the BN to the Minister and the PIA and cannot find the cost amount. Can you please let me know.

Thanks

Jodi Marchand

Manager | Gestionnaire

Traveller Operations Division, Major Initiatives Section | Division des opérations frontalières pour les voyageurs, section des initiatives majeures

Border Operations Directorate | Direction opérations frontalières - Operations Branch | Direction générale des opérations

Canada Border Services Agency | Agence des services frontaliers du Canada

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Canada Border  
Services Agency

Agence des services  
frontaliers du Canada